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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,758	12/08/2003	David Lee	AZMT-002 P1	3464

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EXAMINER

HA, NATHAN W

ART UNIT PAPER NUMBER

2814

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,758

Applicant(s)

LEE, DAVID

Examiner

Nathan W. Ha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Terminal Disclaimer filed 8/2/05 is acknowledged. Accordingly, the previous double patenting has been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyawaki (US 6,268,236, previously cited) in view of Mahulikar et al. (US 4,897,508, previously cited, hereinafter, Mahulikar.)

In regard to claim 1, in figs. 2A-2C, Miyawaki discloses a method of packaging at least one component, comprising:

- providing a lid 2;
- molding sidewalls 1B, for example, onto a substrate to form a plurality of cavities 4 surrounding a component-mounting surface;
- mounting a component 7 on the component-mounting surface in each cavity;
- applying a curable adhesive 3 to a top surface of the sidewalls;
- placing the lid upon the top surface of the sidewalls;
- curing said adhesive; and

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separating the component package assembly into a plurality of individual component packages.

Miyawaki, however, does not disclose that the lid having vent holes.

Mahulikar, in fig. 4, discloses an analogous package including a substrate 12, cavity 30, and a component 22 in the cavity, adhesive layer to attach a lid 14 to the substrate. Fig. 4 further discloses a vent hole 44 and seals the vent, or aperture, in the lid for reaction by-products generated during the cure cycle (col. 7, lines 19-21.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include an aperture in the lid in order to include reaction by-products generated during the cure cycle.

In regard to claim 2, the component 7 as disclosed by Miyawaki is a semiconductor chip; all chips compose of electronic circuits, or IC.

In regard to claims 3 and 10, the component as disclosed by Miyawaki is a high-frequency semiconductor chip. It, therefore, includes radio frequency circuit (see also, col. 5, line 33).

In regard to claim 4, Mahulikar discloses the top cover and sidewalls are formed of polymers (col. 5, lines 48-49 and col. 6, lines 10-13.)

In regard to claim 5, the curing the adhesive to seal the package is performed thermally (col. 6, lines 25-26).

In regarding to claim 6, Miyawaki further discloses wherein separating comprises sawing, for example, wire saw (col. 4, lines 63-67.)

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In regard to claim 7, Miyawali further discloses wherein placing the lid upon the sidewalls comprises applying a substantially uniform pressure over each cavity. (col. 4, lines 34-35.)

In regard to claims 9 and 11, the package as disclosed by Miyawaki includes cavities. These cavities are formed in a normal atmosphere; therefore, they contain air.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyawaki and Mahulikar as applied to claims 1-7 and 9-11 above, and further in view of Song et al. (US 5,776,799, previously cited, hereinafter, Song).

In regard to claim 8, the above combination discloses all of the claimed limitations, except the adhesive layer is formed by screen printing.

Song, in fig. 5, for example, discloses a semiconductor package including adhesive layer 142 is deposited by screen printing process in order to allow the adhesive to be applied to many lead attaching regions at one time (col. 5, lines 49-52.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a widely used process such screen printing to form the adhesive layer in order to allow the adhesive to be applied to many lead attaching regions at one time.

Response to Arguments

4. Applicant's arguments filed 8/2/05 have been fully considered but they are not persuasive. For instance, Applicants contend that the cited art does not disclose the molding limitation as claimed in claim 1. The molding feature is mentioned by the cited

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reference, Miyawaki, is a well known conventional process, and admitted by the Applicants, page 4, first paragraph of the Remarks. Miyawaki acknowledges that the hollow, or cavity, can achieve the same sealing and separation characteristics as those attained by molding, and can yield the same productivity as those yield by a molding process. Thus, it renders the obviousness of the process of creating cavities by molding process. Furthermore, molding is a common and conventional process in semiconductor packaging. Therefore, the combination of the above references is proper and in fact discloses all of the claimed limitations. Miyama further shows the equivalency of the molding and bonding. These processes are interchangeable. Thus, Miyawaki does not teach away from the method as claimed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan Ha
October 5, 2005



HOAI PHAM
PRIMARY EXAMINER